

U S ENVIRONMENTAL PROTECTION AGENCY
INITIAL SITE PROGRESS REPORT

07KN
Site Mid-America Refinery
ID # KSD084091545
Break 22
Other 4-5 98
cm

I HEADING

Date September 5, 1998
From Janice J Kroone, OSC
U S EPA, Region VII
To Robin M Anderson, Acting Director (5203G)
Regions 5/7 Accelerated Response Center
Subject Mid-America Refinery Company (MARCO)
Chanute, Neosho County, Kansas
Report #1

II BACKGROUND

Site ID KN
CERCLIS ID# KSD084091545
Contract Number 68-S7-7001
Delivery Order Number 0024
Response Authority CERCLA
Category of Removal Time Critical
NPL Status Non-NPL
State Notification KDHE Notified
Date Action Memo Signed June 29, 1998
Mob Date July 7, 1998
Demobilization Date N/A
Completion Date N/A

III SITE INFORMATION

A Incident Category

CERCLA incident category This site is an abandoned oil refinery located north of a residential area

B Site Description

1 The Mid-America Refinery Company (MARCO) site is located in Neosho County, Kansas, north of the city limits of Chanute This site is a 25-acre abandoned oil refinery that operated as a crude oil processor from 1934 until it was shut down in February 1981 Suspected asbestos containing material (ACM) was discovered onsite during the course of an Oil Pollution Act (OPA) removal which began in February 1998 Salvagers had

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SUPERFUND RECORDS

damaged the old boiler onsite and had partially dismantled it. Salvaging activities resulted in damage to the integrity of the skin of the boiler thus exposing the insulation material inside. Analytical sample analysis confirmed that the insulation in the boilers was asbestos. Two burners onsite were found to contain asbestos in several gaskets and in insulation located between bricks. An asbestos dump area was also found on site. This material is in poor condition, friable and is open to the environment and therefore can cause a release of asbestos fibers.

Petroleum contaminated soils extend under the buildings onsite. These buildings are not structurally sound and are in disrepair. The state of Kansas has given approval to bury brick and concrete onsite. Because the groundwater is shallow in the east portion of the site, sampling was done on the painted surfaces of the buildings to ensure that the paint on the bricks did not pose a leaching problem. Several of the buildings have peeling paint and laboratory analysis found that the paint failed the Toxicity Characteristic Leaching Procedure ("TCLP") analysis for lead. TCLP lead was found on corrugated tin on the outside of one building. This paint was chipping off. The tin can not be buried onsite and must be shipped to a construction and demolition landfill for disposal.

During removal activities at the site, a burial area approximately 250' x 140' x 11' was found to the north of the old oil water separator on the east portion of the property. Information from a former employee, indicates this buried material came from the clean out of various tanks on site. Petroleum sludge was found in this burial area. This sludge was sampled and found to be a hazardous waste due to failing the Toxicity Characteristic Leaching Procedure ("TCLP") for lead.

2 Description of Threat

EPA's investigation of the suspected Asbestos Containing Material (ACM) determined this material to be asbestos. Some of this material had been enclosed inside a boiler, but metal salvaging operations conducted at the site under the direction of the trustee of the Robert Cooley Trust, has caused a release of asbestos into the environment. As long as the boiler structure remains damaged and in place at the site, there will be a continued release of this material into the environment. ACM was also found in gaskets and insulation in two burners onsite and in a dump area. The dump area is located in an area where runoff could take ACM into a waterway. Windy conditions could cause the ACM at this site to become airborne.

Clinical evidence of the adverse effects associated with exposure to asbestos is present in the form of several well-conducted epidemiological studies of occupationally exposed workers, family contacts of workers, and persons living near asbestos mines. These studies have shown a definite association between exposure to asbestos and an increased incidence of lung cancer, pleural and peritoneal mesothelioma, gastrointestinal cancer, and asbestosis. The latter is a disabling fibrotic lung disease that is caused only by exposure to asbestos. Asbestosis is pulmonary fibrosis caused by the accumulation of asbestos fibers in the lungs. Symptoms include shortness of breath, coughing, fatigue, and vague feelings of sickness. When the fibrosis worsens, shortness of breath occurs even at rest. Exposure to asbestos has also been associated with an increased incidence of esophageal, kidney, laryngeal, pharyngeal, and buccal cavity cancers.

Several buildings onsite contain lead based paint which was found to contain levels of 31.5 mg/l (milligrams per liter) and 6.55 mg/l of lead. This paint was tested using the Toxicity Characteristic Leaching Procedure ("TCLP") and exceeded the limit of 5 mg/l as set forth in 40 CFR 261.24, Table 1. This paint is in poor condition and is flaking off. The brick that this material is on will be buried onsite, the groundwater onsite is very shallow and over time the lead may leach into the groundwater, therefore the paint needs to be removed before the building is demolished and the brick is buried onsite. There is also some tin that is painted with flaking lead based paint that fails TCLP for lead. This tin will be sent to a construction and demolition (C&D) landfill. Therefore the paint needs to be removed from the tin prior to sending the tin to a C&D landfill.

Lead is toxic to humans and animals via exposure through inhalation, ingestion, and direct contact. Lead is persistent in the environment and it bioaccumulates. Therefore, long-term exposure to lower levels can result in a build up of lead in the body and more severe symptoms. Chronic exposure to low levels of lead has been linked to the existence of developmental disabilities in children. The symptoms of mild lead poisoning are decreased physical fitness, fatigue, sleep disorders, headache, aching bones and muscles, digestive symptoms, abdominal pain, and decreased appetite. Young children are the most sensitive to lead toxicity effects. More severe symptoms may include anemia, pale skin, a blue line at the gum margin, decreased hand grip strength, abdominal pain, severe constipation, nausea, vomiting, and paralysis of the wrist joint. Prolonged exposure may also result in kidney damage. Lead is a probable human carcinogen and exposure may also have adverse

effects on the immune system

C Previous Site Actions

1 Investigative History

The Kansas Department of Health and Environment (KDHE) conducted a preliminary assessment/site investigation (PA/SI) of the site in 1986. Field work associated with the PA, conducted on February 2, 1986, visually identified several areas of possibly contaminated soil near the oil/water separator unit and pools of hydrocarbons, apparently from leaky valves and/or pipes, scattered throughout the site.

Field work associated with the SI, conducted in September 1986, included ambient air monitoring for organic vapors and explosive atmospheres, installation of four on-site monitoring wells, ground water well sampling, limited sampling of on-site soil, sediment and sludge, and surface water sampling. The SI did not include an assessment of the buildings or their contents. The SI indicated that ground water contamination, composed of refined petroleum products, was migrating in a southeastwardly direction, following the ground water flow beneath the site. On-site surface water runoff flowed easterly, toward Highway 169, and accumulated along the eastern edge of the property. Surface water samples indicated the presence of hydrocarbons. Surface soil contamination was visible throughout the site, analysis indicated soils in stained areas to be heavily saturated with hydrocarbons.

In conjunction with the SI, a tank evaluation survey was conducted by KDHE. The survey indicated that approximately 40 percent of the tanks had inadequate secondary containment.

On October 9, 1992, KDHE visited the site and conducted a limited inventory of potentially hazardous substances remaining in the on-site buildings. Results indicated that numerous marked and unmarked containers holding various substances were located throughout the buildings. Many hazardous substances, including corrosives, flammables and poisons were found. Buildings were in a dangerous state of decay and fully accessible to the public. Fencing at the site was inadequate and in some areas in a state of disrepair.

On November 16 - 18, 1992, EPA and Ecology and Environment's Technical Assistance Team, conducted a site assessment. The assessment included documentation of site conditions, an inventory of all containers inside buildings, collection of

ground water samples from on-site monitoring wells, surface water samples from an off-site drainage ditch and from the oil/water separator system, and soil, debris, sediment and sludge samples from the site. Field screening found asbestos materials in pipe wrap and tank insulation. The assessment found that excessive runoff and pools of oily water were observed throughout the site during heavy precipitation. Floor sweepings composited from floors of the on-site laboratories found extensive mercury contamination. Most of the abandoned drums found onsite were rusted and leaking. Materials in the drums were found to be RCRA hazardous waste. No PCBs were detected in samples collected onsite. Volatile organic compounds (VOCs) associated with petroleum products were detected in the ground water sample, with benzene showing the highest concentration at 972 ug/l. On-site soil and sludge samples collected from the holding pond indicated total petroleum hydrocarbons (TPH) with the highest concentration of 165,400 milligrams per kilogram (mg/kg).

In May 1997, EPA surveyed the property and produced a site map to determine the number and condition of tanks remaining onsite.

A Phase I and II Comprehensive Investigation (CI) was performed by Golder Associates Inc. (Golder) on behalf of the Kansas Department of Health (KDHE) under the State Water Plan. Phase I was conducted the week of Dec 8, 1997 and Phase II from March 30 - April 10, 1998. The phase I CI found total petroleum hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene and Xylene (BETX) compounds, and naphthalene in soil and in the groundwater attributable to MARCO to have migrated approximately 500 feet down gradient of the site. These contaminants were found to a depth of 13 feet. Phase II information has not been received to date.

During an OPA removal action which began in February 1998, suspect asbestos material was found in a boiler, two burners, and in a dump area. Analytical sample results indicate that this material was asbestos.

During the OPA removal, a sample was pulled from a burial area near the oil/water separator. Sample results from 1994 had indicated total lead exceeded 1,400 ppm in this area. Sample results failed TCLP for lead.

2 Past removal actions

On July 9, 1994, an Action Memorandum was signed by

EPA EPA began a Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) clean-up in August 1994 and the action was completed in March 1995 This removal cost approximately \$1,192,731 The CERCLA removal included the following actions

Vandals had broken mercury thermometers and gauges in several laboratory buildings on-site creating extensive mercury contamination in these buildings Mercury contaminated waste was removed from these buildings and air monitoring was accomplished Air monitoring results indicated that established clean-up levels were achieved Two hundred and twenty six gallons of D009 waste was transported from the site and disposed of

The oil/water separator was excavated and the sludge was mixed with fly ash and shipped off-site to an approved disposal facility A total of 476 tons of F037 waste was removed from the site The oil/water separator was backfilled with clean fill dirt

All laboratory chemicals and drums of hazardous waste that were found abandoned throughout the site were sampled, appropriately containerized for shipping, profiled and disposed of at an approved disposal facility This includes the following wastes and quantities D001(ignitable) - 2,055 gallons, D002 (corrosive) - 440 gallons, D008(lead) - 5 gallons, D007(chromium) - 5 gallons, D015(Toxaphene) - 5 gallons, and D023(o-cresol) 10 - gallons

Asbestos containing materials (ACM) was abated from tanks, cracking towers, piping and boilers by a state of Kansas certified company A total of 1,320 cubic yards of asbestos was removed from the site and transported to an approved landfill

The contents of all tanks were sampled and it was determined that one tank contained approximately 300 gallons of ignitable hazardous waste (D001) This material was pumped into 55-gallon drums and transported to an approved disposal facility

The remaining tanks contained petroleum materials which could not be included in the CERCLA removal action due to the CERCLA petroleum exclusion provision EPA left 138 tanks on-site, fifty-nine of which contained petroleum related materials

After the CERCLA clean-up was completed, Robert Moore, the trustee of the Robert Cooley Trust fund which owns the property, obtained the services of numerous scrap metal salvagers These individuals scrapped 110 tanks and associated piping and

discharged much of the contents onto the ground' Due to their scrapping efforts, tops and sides of tanks were cut off which has allowed rainwater to collect in the tanks and the petroleum materials to directly discharge onto the ground' Because the site sits on a steep hill, run-off from rain events allow these petroleum materials to discharge indirectly into the Neosho River

Also during scrapping activities, the use of cutting torches to salvage steel from tanks and piping repeatedly started fires igniting petroleum products remaining in the tanks and piping Sometimes fires were intentionally set in the tanks to burn out the tank contents so the tanks could be more easily salvaged The Chanute Fire Department responded to approximately nine fires at the site during the period from August 1995 to October 1996 During one fire, on October 15, 1996, 50 gallons of oil had drained across the road and caught on fire which in turn caught a tank on fire This fire burned out vegetation from a wetlands areas Residents three miles north of the site were concerned about smoke from the fire

In November 1997, KDHE fenced the west side of the site to restrict access to the property

On February 17, 1998, an OPA removal action began at the MARCO site All tank sludges were removed, all tanks have been scrapped, the liquid contents of the underground piping was removed along with the underground piping To date 72,051 43 tons of petroleum contaminated soil has been transported to the ADS Resource Recovery, Inc , landfill in Cherryvale, Kansas, 60,525 gallons of petroleum contaminated water has been shipped to Great Plains Environmental, Chanute KS for treatment, 55,306 gallons of hot oil has been shipped to various facilities to be fuel-blended, 255 12 tons of solidified tank sludge was sent to the Resource Recovery, Inc landfill, 2,544,200 gallons of contaminated runoff has been treated with EPA's Emergency Response Water Treatment unit, the Springfield Belle, 1,052 82 tons of scrap metal has been sent to American Compressed Steel in Kansas City, Missouri for recycling and 268 95 tons of construction debris has been sent to Proper Disposal in Chanute, Kansas Removal efforts on this site continue (See MARCO OPA POLREPs for complete details of OPA removal)

IV RESPONSE INFORMATION

A Situation

1 Current Situation

This POLREP covers the period from July 7 - August 31, 1998. Temperatures during this time frame ranged from the upper 80s to mid 90s.

On August 12, Dan Sullivan, an asbestos inspector from the Kansas Department of Health and the Environment, visited the site to inspect windbreaks and asbestos removal work.

2 Removal Activities to Date

Lead based paint was scrapped from building 3 and the tin siding on building 5. This material was containerized waiting proper disposal.

Five small piles of lead contaminated soil/sludge were excavated in the burial area. These five piles were treated with concentrations of fly ash at 10%, 20%, 30%, 40%, and 50%. The piles were sampled after 24 and 38 hours. Results indicated that a 10% addition of fly ash would reduce the lead to below the TCLP value of 5 mg/l.

The asbestos removal work was awarded to Industrial Construction and Engineering Co. (ICE), Wichita, Kansas. The asbestos material will be sent to the Allen County landfill, which is approved to receive this material.

On August 5, the asbestos contractor began removal preparation by erecting windbreaks around the boiler structure, installing scaffolding and removing bricks in nonasbestos areas around the boiler structure.

Asbestos removal began on August 18 and was completed on September 4. Once asbestos had been removed from metal surfaces, the metal was encapsulated with white paint per KDHE regulations. Two rolloff boxes, containing a total of 80 cubic yards of asbestos material, were sent to the Allen County landfill for disposal.

KDHE agreed to review and approve analytical data on each 500 ton pile of lead contaminated treated soil when analytical results indicated that the material passed TCLP for lead. The soil is mixed with the fly ash in the excavation area and then hauled to the load out area and staged in 500 ton piles to await sampling. This week a total of three - 500 ton piles were mixed with 10% fly ash and the samples taken to the laboratory for analysis.

Running along the eastern portion of the site, a four inch

concrete asbestos water pipe was found at a depth of four feet deep. KDHE was contacted about proper handling, disposal of this pipe. This pipe is considered Category II, NESHAP, nonfriable and KDHE does not regulate this material. Per KDHE's recommendation, this pipe was removed from the excavation area, double bagged in asbestos bags and staged onsite awaiting removal of the remaining pipe.

3 Enforcement

In May 1993, the Robert Cooley Trust purchased the MARCO site. Robert Moore is presently the trustee. In 1994, EPA attempted to negotiate with the current owners of the site for a Consent Order in which they would undertake all time-critical removal actions necessary at the site. Negotiations for the Responsible Party (RP) to perform the clean-up were unsuccessful, therefore EPA conducted a CERCLA time critical removal from August 1994 - November 1994. In March 1995, the original action memo was amended to include disposal of ignitable hazardous waste from a tank, the PRPs were once more contacted to perform that portion of the removal. The PRPs again refused and EPA performed the remaining removal action.

On October 28, 1996, EPA issued a Unilateral Administrative Order, ("UAO"), pursuant to Section 7003 of the Resource Conservation and Recovery Act, ("RCRA"), 42 U.S.C. 6973, to Respondents requiring them to cease their current activities at the Site related to the dismantling of tanks and piping, and requiring them to install a fence around the Site, inventory all tanks and piping and prepare a plan for EPA approval to safely dismantle all existing tanks and exposed piping at the Site. EPA took this measure only after determining that there may be an imminent and substantial endangerment to human health and the environment because of the release and discharges, or threatened release and discharges, of oil and hazardous and/or solid wastes from the Site.

In March 1996, EPA requested assistance from the Department of Justice in enforcing the 7003 Order, and potentially obtaining a Temporary Restraining Order (TRO). In April 1996, a Department of Justice (DOJ) attorney visited the site, interviewed the fire department, EPA and KDHE personnel. DOJ concluded that since no salvaging operations were ongoing at the time, DOJ would not pursue the TRO.

B Next Steps

Continue to excavate and treat lead contaminated soil in

burial area near old oil/water separator

Upon reaching treatment goals, this material will be staged awaiting transportation and disposal to the Resource Recovery Landfill in Cherryvale, KS

Excavated areas will be backfilled and restored to eliminate erosion of clean backfill from the site

C Key Issues

None

V COST INFORMATION (as of August 31, 1998)

A Extramural Costs

1 ERRS Contractor

Current Amount in Delivery Order	\$1,121,812
Costs to date (not including awaits)	1,756

DELIVERY ORDER CEILING BALANCE	1,120,056
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PERCENT OF ERRS FUNDS REMAINING	99 8%
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2 START Contractor

Current Ceiling	57,500
Costs to date	1,000

CEILING BALANCE	56,500
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PERCENT OF START FUNDS REMAINING	98%
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TOTAL EXTRAMURAL CEILING	\$1,179,312
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TOTAL EXTRAMURAL COSTS TO DATE	2,756
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TOTAL EXTRAMURAL CEILING BALANCE	\$1,176,556
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B Intramural Costs

Current Ceiling	\$25,000
Actual Costs to date	1,079

TOTAL INTRAMURAL CEILING BALANCE	23,921
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TOTAL PROJECT CEILING	\$1,204,312
TOTAL EXTRAMURAL AND INTRAMURAL COST TO DATE	3,835
TOTAL PROJECT CEILING REMAINING	\$1,200,477
PERCENT OF PROJECT CEILING REMAINING	99.7%

The above accounting of expenditures is an estimate based on figures known to the EPA OSC at the time this POLREP was written. It reflects costs EPA costs incurred onsite.

VI DISPOSITION OF WASTES

80 Cubic yards of asbestos material was removed from this site and sent to the Allen County Landfill.

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	Bill Allen, DOI	Jim Donley, FEMA
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